

## **REMARKS**

Claims 1-23 are pending in the application. The second non-final Office Action, mailed January 25, 2012, rejects all pending claims.

This paper amends claims 7, 8, 18, and 19. Applicant submits that no new matter has been introduced by these amendments. Applicant is not conceding that the subject matter encompassed by claims 7, 8, 18, and 19 prior to this Amendment is not patentable over the art cited by the Office. Claims 7, 8, 18, and 19 were amended in this Amendment solely to facilitate expeditious prosecution of the application. Applicant respectfully reserves the right to pursue claims as presented prior to this Amendment, including the subject matter encompassed by claims 7, 8, 18, and 19 and additional claims in one or more continuing applications.

Claims 1-23 remain pending in the application.

### **35 U.S.C. § 112**

The office action rejects claims 8-11 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant amends claim 8 to correspond to the interpretation held by the Office, and submits the amendment overcomes the rejection of claims 8-11.

### **35 U.S.C. § 103**

The office action rejects claims 1-5, 8, 12-16, 19, and 23 under 35 U.S.C. 103(a) as being unpatentable over Nichols (US Patent No. 6,453,946) in view of Uesugi (US Pat. Appln. Pub. No. US 2003/0147302). Applicant respectfully traverses the rejection and requests that it be withdrawn because neither Nichols nor Uesugi, whether taken alone or in combination, teaches or suggests at least one of said rotor bearing surface and said stationary load bearing surface having a DLC (i.e. "diamond-like carbon")-silica coating, as set forth in the applicant's claimed invention.

On page 5 / line 16 of the Office Action, the Office admits that Nichols does not disclose a DLC (i.e. "diamond-like carbon")-silica coating, and for this limitation relies on Uesugi. However, applicant respectfully submits that the Office appears to have mischaracterized Nichols by maintaining that the tungsten carbide/carbon coating taught by Nichols is a form of diamond-

like carbon (page 4/line 9 through Page 5/ line 2 of the Office Action). Applicant submits that one of ordinary skill in the material arts would readily recognize the distinctions between a tungsten carbide/carbon composition and a DLC ("diamond-like carbon") composition, where the chemical compositions, crystallographic structures and material properties of these compositions are well characterized and known in the art as distinct compositions of matter with distinct chemical, physical and crystallographic properties. Thus, contrary to the Office's opinion, Nichols does not even disclose the diamond-like carbon coating upon which the Office relies for its combination with Uesugi in order to produce the applicant's claimed diamond-like carbon-silica coating.

Further, the Office appears also to have mischaracterized the teachings of Uesugi, by asserting that Uesugi teaches the use of a diamond-like carbon silica coating in paragraph [0023] (page 5/line 17 of the Office Action). Applicant submits that, in paragraph [0023], Uesugi teaches a cylindrical ceramic stator formed from a conventional ceramic material, such as silicon carbide (SiC), silicon nitride (Si<sub>3</sub>N<sub>4</sub>), zirconia (ZrO<sub>2</sub>) or alumina (Al<sub>2</sub>O<sub>3</sub>). Applicant further submits that Paragraph [0023] of Uesugi does not teach "a form of diamond like carbon", as asserted by the examiner, or a DLC ("diamond-like carbon")-silica coating, as taught by the applicant, but rather an uncoated cylindrical ceramic stator formed from one of the conventional ceramic materials cited in paragraph [0023] as noted above. The DLC carbon-silica coating, as taught by the Applicant, is not silicon carbide, but rather a mixture of diamond-like carbon and silica (i.e. "SiO<sub>2</sub>"), which are distinctly different compositions of matter from silicon carbide. It appears that the Office mistakes the traditional silicon carbide ceramic material employed in Uesugi's ceramic stator with the DLC carbon-silica coating as claimed by the applicant. Nowhere does Nichols or Uesugi, either alone or in combination, teach or disclose a DLC-silica coating, nor do the references teach or disclose any components or parts that are coated with a DLC-silica coating. Therefore, applicant submits that the invention is patentable over Nichols in view of Uesugi, and respectfully requests that the rejection be withdrawn.

Independent claim 12 recites language similar to that recited in independent claim 1, and therefore is patentable for at least those reasons presented in connection with claim 1. Applicant therefore respectfully requests that the rejection against this claim also be withdrawn.

Each of the dependent claims 2-8, 13-16, 19, and 23 depends directly or indirectly from one of the independent claims and inherits all elements from that independent claim, and therefore is patentable for at least those reasons presented in connection with the independent claim from which it depends. Applicant therefore respectfully requests that the rejection against these claims also be withdrawn.

The office action also rejects claims 6, 7, and 18 under 35 U.S.C. 103(a) as being unpatentable over Nichols in view of Welty, and further in view of Doll (US Pub. No. 2006/0257663), and claims 9-11 and 20-22 over Nichols in view of Welty, and further in view of Ahlgren (US Patent No. 6,719,001). Applicant respectfully traverses these rejections because these claims depend directly or indirectly from one of the allowable independent claims and are therefore allowable for at least this reason. Hence, the applicant respectfully requests that the rejection be withdrawn.

### **CONCLUSION**

Applicant submits that this paper provides a response for all pending claims. Any absence of a reply to a specific rejection, issue, or comment, or to any taking of “official notice” or reliance on “common sense”, however, does not signify agreement with or concession of that rejection, issue, comment, taking of “official notice”, or reliance on “common sense”. In addition, because the arguments made above are not exhaustive, there may be reasons for patentability of any or all pending claims that have not been expressed.

In view of the amendments and arguments made herein, applicant submits that the application is in condition for allowance and requests early favorable action by the Examiner.

If the Examiner believes that a telephone conversation with the applicant’s representative would expedite allowance of this application, the Examiner is cordially invited to call the undersigned at (508) 303-0932.

Respectfully submitted,

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